



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/055,523	01/23/2002	Donald Felt Kimball	4740-039	9349
24112	7590	04/05/2005	EXAMINER	
COATS & BENNETT, PLLC			SHINGLETON, MICHAEL B	
P O BOX 5			ART UNIT	
RALEIGH, NC 27602			PAPER NUMBER	
			2817	

DATE MAILED: 04/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/055,523

Applicant(s)

KIMBALL ET AL.

Examiner

Michael B. Shingleton

Art Unit

2817

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE Three MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-55 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1, 15-29, 30, 40, 47 is/are rejected.
- 7) ☒ Claim(s) 2-14, 30-39, 41-46, 48-55 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 4-7-03, 4-12-02, 4/10/03
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 40 and 47 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Ikeda et al. 5,708,376 (Ikeda).

Figure 1 and the relevant text of Ikeda discloses a multistage amplifier arrangement and method of “improving” the performance of a multistage amplifier having at least an initial stage 14 and a final stage 11. Ikeda includes the steps and structure of deriving a current-mode first feedback signal from an output of the initial stage via the feedback path 5, deriving a current-mode second feedback signal from an output of the final stage via the feedback path 13. Figure 1 of Ikeda clearly shows the first and second feedback paths being combined at the inverting terminal of the first stage 14. Note that the series combination of resistor R_1 and C_1 of the instant invention is called a “current-mode” producing signal. The capacitor elements 5 and 13 of the Ikeda reference must also produce a “current-mode” signal as meant by applicant for there is a discrete resistance in the line with these capacitors 5 and 13 forming the same type of feedback path that applicant refers to as producing a “current-mode” signal. As to the term “improving” this is viewed as a broad term for clearly the device of Ikeda is “improved” over some other multistage amplifier. Note that in *STX LLC. v. Brine*, 211 F.3d 588, 591, 54 USPQ2d 1347, 1350 (Fed. Cir.2000) (holding that the preamble phrase “which provides improved playing and handling characteristics” in a claim drawn to a head for a lacrosse stick was not a claim limitation) (See MPEP 2111.02). Note that the input signal is applied to the non-inverting terminal of the initial stage amplifier 14. Claim 47 recites “setting a frequency response of at least one of the first and second feedback signals to compensate for a frequency response of the multistage amplifier”. The capacitors 5 and 13 will set a frequency response, as these are reactive elements. As to the phrase “to compensate for a frequency response of the multistage amplifier”, this is a very broad phrase in that the mere setting of a frequency response compensates for a frequency response of the multistage amplifier. In other words setting the capacitance values of the feedback paths mentioned above selects or modifies (compensates for) the frequency response of the multistage amplifier from what it would have been had there been no capacitors

in the feedback paths. Furthermore the frequency response of the multistage amplifier due to the DC feedback is compensated for as the DC frequency is blocked that the capacitors 5 and 13 in Ikeda.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 15-18 and 21-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ikeda et al. 5,708,376 (Ikeda).

Figure 1 and the relevant text of Ikeda discloses a multistage amplifier arrangement and method of "improving" the performance of a multistage amplifier having at least an initial stage 14 and a final stage 11. Ikeda includes the steps and structure of deriving a current-mode first feedback signal from an output of the initial stage via the feedback path 5, deriving a current-mode second feedback signal from an output of the final stage via the feedback path 13. Figure 1 of Ikeda clearly shows the first and second feedback paths being combined at the inverting terminal of the first stage 14. Note that the series combination of resistor R_1 and C_1 of the instant invention is called a "current-mode" producing signal. The capacitor elements 5 and 13 of the Ikeda reference must also produce a "current-mode" signal as meant by applicant for there is a discrete resistance in the line with these capacitors 5 and 13 forming the same type of feedback path that applicant refers to as producing a "current-mode" signal. As to the term "improving" this is viewed as a broad term for clearly the device of Ikeda is "improved" over some other multistage amplifier. Note that in *STX LLC. v. Brine*, 211 F.3d 588, 591, 54 USPQ2d 1347, 1350 (Fed. Cir.2000) (holding that the preamble phrase "which provides improved playing and handling characteristics" in a claim drawn to a head for a lacrosse stick was not a claim limitation) (See MPEP 2111.02). Note that the input signal is applied to the non-inverting terminal of the initial stage amplifier 14. Ikeda is silent on the use of an "intermediate stage" or intermediate buffer stage between the first and last stage amplifiers. Ikeda does show the use of MOSFETs for the construction of the final stage (Note Figure 11).

The use of Buffers for impedance matching and stage isolation is well known in the art. Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was

made to have provided an intermediate stage buffer amplifier between the initial stage and the final stage in Ikeda so as to provide for impedance matching and stage isolation between stages as is conventionally known in the art.

Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamada 5,737,697 (Yamada) in view of Ikeda et al. 5,708,376 (Ikeda).

Figure 1 and the relevant text of Yamada disclose a radio base station including a RF power amplifier 3 and a variable gain amplifier 2. Yamada is silent on the details of the variable gain amplifier 2.

As noted above Figure 1 and the relevant text of Ikeda discloses a multistage variable gain amplifier arrangement and method of "improving" the performance of a multistage amplifier having at least an initial stage 14 and a final stage 11. Ikeda includes the steps and structure of deriving a current-mode first feedback signal from an output of the initial stage via the feedback path 5, deriving a current-mode second feedback signal from an output of the final stage via the feedback path 13. Figure 1 of Ikeda clearly shows the first and second feedback paths being combined at the inverting terminal of the first stage 14. Note that the series combination of resistor R_1 and C_1 of the instant invention is called a "current-mode" producing signal. The capacitor elements 5 and 13 of the Ikeda reference must also produce a "current-mode" signal as meant by applicant for there is a discrete resistance in the line with these capacitors 5 and 13 forming the same type of feedback path that applicant refers to as producing a "current-mode" signal. As to the term "improving" this is viewed as a broad term for clearly the device of Ikeda is "improved" over some other multistage amplifier.

Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to replace use the variable gain amplifier of Ikeda for the variable gain amplifier 2 of Yamada because, as the Yamada reference is silent on the exact variable gain amplifier circuit one of ordinary skill in the art would have been motivated to use any art-recognized equivalent variable gain amplifier circuit for the variable gain amplifier of Yamada such as the conventional variable gain amplifier circuit as taught by Ikeda.

Claims 19, 20 and 24-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Grondahl 5,936,464 (Grondahl) in view of Ikeda et al. 5,708,376 (Ikeda).

Figures 1 and 4, and the relevant text of Grondahl discloses a radio base station for use in a communication network (Note that the intended use of "base station" is clearly met by Grondahl because

even if the communication device of Grondahl is a portable, when a portable is used in a fixed location it becomes a “base station” in a communication network.). Grondahl further includes a RF power amplifier 260 that receives a supply voltage from an envelope amplifier 270. This forms the basic EER amplifier arrangement. Also note that EER means that the input signal is split into two paths the amplitude path that includes the amplifier 270 and the phase path (See column 2, around line 37). Also as the device of Grondahl is a transmitter as shown in Figure 4, clearly Grondahl includes “transmit processing resources generating the amplitude and phase modulation signals based on desired transmit information.” Grondahl is silent on the exact details of the amplifier structure 270.

As noted above Figure 1 and the relevant text of Ikeda discloses a multistage amplifier arrangement and method of “improving” the performance of a multistage amplifier having at least an initial stage 14 and a final stage 11. Ikeda includes the steps and structure of deriving a current-mode first feedback signal from an output of the initial stage via the feedback path 5, deriving a current-mode second feedback signal from an output of the final stage via the feedback path 13. Figure 1 of Ikeda clearly shows the first and second feedback paths being combined at the inverting terminal of the first stage 14. Note that the series combination of resistor R_1 and C_1 of the instant invention is called a “current-mode” producing signal. The capacitor elements 5 and 13 of the Ikeda reference must also produce a “current-mode” signal as meant by applicant for there is a discrete resistance in the line with these capacitors 5 and 13 forming the same type of feedback path that applicant refers to as producing a “current-mode” signal. As to the term “improving” this is viewed as a broad term for clearly the device of Ikeda is “improved” over some other multistage amplifier.

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to replace use the 270 amplifier of Grondahl with that of because, as the Grondahl reference is silent on the exact variable gain amplifier circuit one of ordinary skill in the art would have been motivated to use any art-recognized equivalent amplifier circuit for the amplifier of Grondahl such as the conventional amplifier circuit as taught by Ikeda

Claims 2-14, 30-39, 41-46 and 48-55 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael B. Shingleton whose telephone number is (571) 272-1770.

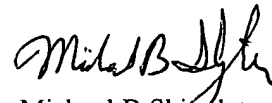
Art Unit: 2817

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Pascal, can be reached on (571)272-1769. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MBS

March 23, 2005



Michael B Shingleton
Primary Examiner
Art unit 2817